Remarks

In the current Office Action, the Examiner has withdrawn the previous rejections under 35 U.S.C. § 112, in view of the amendments entered by Applicant on June 13, 2008.

In the current Office Action, the Examiner has rejected Claims 1 and 3-24 under 35 U.S.C. § 101, as allegedly being directed to non-statutory subject matter. The Examiner has further rejected Claims 1 and 3-24 under 35 U.S.C. § 103(a) as being allegedly obvious in view of Shmoys, *et al.*, "Approximation algorithms for facility location problems," 1997 Proceedings of the twenty-ninth annual ACM symposium on Theory of computing, El Paso, Texas, United States, pages 265-274(1-21)(hereinafter "Shmoys").

Applicant asserts that, in view of the foregoing amendments to the claims and the following remarks, the rejections under §§ 101 and 103(a) should be withdrawn.

I.   The requested claim amendments.

Applicant has amended independent claim 1; amended dependent claim 10; added new claims 25 and 26; and canceled claims 3-9 and 11-24. The foregoing claim amendments are requested for the purpose of (1) addressing the Examiner's current rejections under §§ 101 and 103(a) and (2) focusing the current claims on the primary embodiments for which patent protection is sought. In view of the considerable number of amendments made to the claims, for the Examiner's convenience and reference, the following claim charts provide the corresponding locations in the specification of the present application, which provide the necessary written support for such amendments pursuant to 35 U.S.C. § 112.

Claim 1	**Specification**
A method for placing branch locations comprising the steps of:	
(a) ~~identifying~~ submitting geographical information for ~~at least one~~ a plurality of service provider branch ~~location~~ locations to a central processing unit of a computer system, wherein said geographical information comprises an exact or approximate location of each of said service provider branch locations;	Paragraphs [0012], [0014], [0035], [0048], and [0071]
(b) identifying ~~at least one~~ a plurality of groups of service ~~receiver~~ receivers from a list of service receivers recorded within or accessible by the central processing unit, and instructing the central processing unit to calculate a population number of service receivers within each group of service receivers;	Paragraphs [0013], [0014], [0035], [0036], [0048], and [0071]
(c) ~~identifying~~ submitting a measure of service receiver value to the central processing unit through the computer system, wherein the measure of service receiver value represents a product of (i) the population number of service receivers within each group of service receivers and (ii) an average income level of the service receivers within each group of service receivers;	Paragraph [0036]
(d) instructing the central processing unit to calculate ~~calculating~~ the value of each of said groups of service receivers based on said measure of service receiver value;	Paragraphs [0036] and [0040]
(e) instructing the central processing unit to determine ~~determining~~ which of said service provider branch locations is the closest service provider branch location by average travel time for each of said groups of service receivers using a routing system, wherein the routing system extracts, from a database, drive time information for road segments between each of the service receivers within each group and each of said service provider branch location;	Paragraphs [0040] - [0042], [0050]
(f) instructing the central processing unit to calculate ~~determining~~ a probability value of whether ~~that each of~~ said service receivers within each group of services receivers will utilize said closest	Paragraphs [0037] - [0039], [0049]

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Claim 1	Specification
service provider branch location, wherein said probability value is based upon (i) an average drive time between said service receivers and said closest service provider branch location and (ii) consumer behavior statistics;	
(g) instructing the central processing unit to calculate a value of service provider branch network for each service provider branch location, wherein the value of service provider branch network is calculated by summing for each group of service receivers for which each service provider branch location is said closest service provider branch location the products of (i) the value of each group of service receivers as calculated in step (d) and (ii) the probability value of whether each group of service receivers will utilize said service provider branch location as calculated in step (f); and	Paragraphs [0043] - [0045]
(h) instructing the central processing unit to identify the service provider branch location having the highest value of service provider branch network.	Paragraphs [0043] and [0045]

Claim 10	Specification
The method of claim ~~9~~ 1 including the further steps of: (a) defining a probability threshold; and (b) determining ~~a~~ the value of service provider branch network for each of said service provider branch locations ~~by assigning a portion of said value of each service receiver to each service provider branch location~~ based only on groups of service receivers having a probability value ~~for said service receiver~~ above said probability threshold.	Paragraphs [0017] and [0022]

Claim 25	Specification

The method of claim 10, which further comprises the steps of:
    (a) instructing the central processing unit to discard service provider branch locations having a value of service provider branch network below a threshold value;
    (b) instructing the central processing unit to identify a
	Paragraphs [0020], [0068]-[0069], and Figure 6

Claim 25	Specification

mutated set of service provider branch locations, wherein the mutated set of service provider branch locations have a value of service provider branch network above the threshold value and exclude the service provider branch location having the highest value of service provider branch network
 	
  (c) mutating geographical information for each service provider branch location within the mutated set of service provider branch locations to create modified geographical information, wherein said geographical information consists of a zip code and said mutation step comprises increasing or decreasing the zip code; and
 	
  (d) repeating steps (a) through (h) in claim 1 by submitting the modified geographical information to the central processing unit as the geographical information recited in step (a) of claim 1.	

Claim 26	Specification
The method of claim 25, wherein said mutation step comprises increasing or decreasing the zip code by 10%.	Paragraph [0069]

II.   **The requested amendments to the claims render the rejections under 35 U.S.C. § 101 moot.**

In the current Office Action, the Examiner has rejected Claims 1 and 3-24 under

35 U.S.C. § 101, as allegedly being directed to non-statutory subject matter. The

Examining Attorney asserted that the methods recited in the previous claims were

capable of being carried out within the human mind. (Office Action, p. 6-7). In

response, Applicant has amended all currently pending claims to require the methods

recited therein to be carried out through the use of a central processing unit of a computer

system. As such, Applicant respectfully contends that the rejections under § 101 should

be withdrawn. Furthermore, Applicant contends that the claims, as amended above,

comport with the requirements set forth in the recent decision of _In re_ Bilski, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (Fed. Cir. 2008).

III. The rejections under 35 U.S.C. § 103(a) should also be withdrawn.

The primary reference that the Examiner relies upon in rejecting Claims 1 and 3-24 is Shmoys. Applicant respectfully states that, in view of the above-requested claim amendments, and the remarks below, Claims 1, 10, 25 and 26 are not obvious in view of Shmoys and should be allowed to issue. As explained below, there are several significant limitations that have been added to such claims, which are not disclosed, suggested, or obvious extensions of any of the algorithms described in Shmoys.

A. Claim 1.

There are several important and non-obvious differences between Shmoys and the claimed invention. Importantly, these differences (which are relevant to all currently pending claims) are cumulative and, collectively, render the claimed invention completely different than the algorithms disclosed in Shmoys. As such, the current rejections under § 103(a) should be withdrawn. These differences between amended Claims 1 and 10 (and new Claims 25 and 26) and Shmoys will be discussed further below.

**Point 1.** The present Office Action equates "a measure of service receiver value" with the desire to identify low cost service receivers (vis-à-vis merely calculating the distance, _i.e._, the geometric distance, between service providers and receivers). The "service receiver value" recited in the pending claims is not related to a measure of the cost associated with a service receiver, but rather the value of a particular service receiver to a service provider.

Claim 1 has been amended to expressly require that "service receiver value" take into account the headcount of customers ("population number") within a defined area and, furthermore, the income level of the subject group of customers. Claim 1 has been amended to clarify and limit the "service receiver value" to be a product of both criteria - headcount (population number) and the "average income level" of the services receivers within the group being analyzed. In other words, the "service receiver value" recited in amended Claim 1 is relevant to and based upon the amount of revenue that a service receiver may provide to a service provider - and is not merely the one-dimensional cost to a particular service provider, which the Examiner contends may be surmised, in Shmoys, by a calculation of geometric distance between a service receiver and provider.

Point 2. The present Office Action equates "distance" (used in Shmoys) with "travel time" (used in the present invention). *See, e.g.,* amended Claim 1, step (e). The use of "travel time" in the context of the present invention is completely different than mere "distance" - or, more particularly, the mere geometric distance contemplated in Shmoys. This is another important difference between the claimed invention and Shmoys. For example, when "determining which … service provider branch locations [are] the closest service provider branch location for each … [of the] service receivers," the outcome may be very different if "travel time" (a more complex metric) is considered instead of mere "distance" or geometric distance, which is a basic calculation of the distance between two points (such distance is often referred to as *as the crow flies*"). Of course, the Examiner should appreciate that mere "distance" does not take into account the roads that a traveler may be forced to take. In other words, the basic distance, or geometric distance, contemplated in Shmoys would represent the distance between two

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geographical locations ("*as the crow flies*"), without considering the total distance that a person may actually be required to travel in view of road directions, road turns, road availability, road driving speeds, rivers or creeks (with no bridges in the proximity thereof), mountain ranges, etc. Claim 1 has been amended to require the use of a "routing system," as disclosed in the specification, which "extracts, from a database, drive time information for road segments between each of the service receivers within each group and each of [the] service provider branch locations." Here again, this is not disclosed in Shmoys.

Point 3. On Page 9 of the present Office Action, the Examiner states that "Shmoy notes on page 2 para 2 that the analysis of assignment of service receivers to locations can be made using probabilistic analysis - [and that] this suggests determining a probability that a receiver will use the closest branch location." Importantly, however, to the extent that Shmoys discloses using probabilistic analysis (albeit only making passing references to the same), it seems to disclose using "probabilistic analysis" instead or in replacement of "distance" (which, as described above, is wholly inferior to using "travel time" in this context).

Setting that difference aside, Applicant has further amended Claim 1 to require the central processing unit recited therein to calculate the probability of a group of service receivers visiting the closest service provider branch location, based on "(i) an average drive time between [the] service receivers and [the] closest service provider branch location and (ii) consumer behavior statistics." Shmoys only discloses calculating geometric distances between two points – and does not disclose or suggest deriving a probability value based on "drive time" and "consumer behavior statistics."

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Point 4. Applicant has further amended Claim 1 to require the central processing unit to derive "a value of service provider branch network for each service provider branch location," which represents a summation (for each group of service receivers for which each service provider branch location is determined to be the closest service provider branch location) of the products of (a) the "value" of each group of service receivers as calculated in Claim 1, step (d) (based upon population numbers and income levels) and (b) the "probability value" of whether each group of service receivers will utilize the service provider branch location as calculated in Claim 1, step (f) (with the probability value being dependent upon "drive time" and "consumer behavior statistics"). Based on the summation of these products, the central processing unit is instructed to identify the service provider branch network having the highest value, as recited in amended Claim 1. Here again, this method of identifying optimal service provider branch locations is simply not found anywhere in Shmoys.

* * *

In view of all four of the above differences between Shmoys and amended Claim 1, Applicant respectfully submits that the method recited in Claim 1 should not be considered an obvious derivation over the algorithms disclosed in Shmoys.

B.   Claim 10.

Claim 10, which depends from Claim 1, has been amended to require that the central processing unit establish a probability threshold, *e.g.*, a minimum probability that service receivers will utilize a service provider. Claim 10 further requires that, when the value of the service provider branch location is determined (as recited in Claim 1, steps (c) and (d)), the central processing unit will only consider those groups of service

receivers having a probability value above the established threshold (and not consider those below such threshold). This step is not disclosed in Shmoys. Therefore, in view of the differences between the steps recited in Claim 1 and the algorithms disclosed in Shmoys, as well as the difference provided by amended Claim 10, Applicant respectfully submits that Claim 10 should be allowed to issue.

C.   Claims 25 & 26.

New Claims 25 and 26, which depend from Claims 10 and 1, require that additional service provider branch locations be identified, following the identification of a first service provider branch location having the highest service provider branch network value. More particularly, Claim 25 requires that (1) a set of service provider branch locations "having a value of service provider branch network below a threshold value" be discarded; and (2) a mutated set of service provider branch locations be created. Claim 25 requires that the mutated set of service provider branch locations have a value of service provider branch network above the threshold value – but excluding the service provider branch location previously determined to have the highest value of service provider branch network (which is not incorporated into the mutated set of service provider branch locations).

Claim 25, and the specification, provide that the mutated set of service provider branch locations will be created by mutating the geographical information for each service provider branch location within the mutated set of service provider branch locations. More particularly, Claim 25 requires that the zip codes associated with each service provider branch location be increased or decreased – with Claim 26 requiring that each such zip code be increased or decreased by 10%.

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Once the mutated set of service provider branch locations is created, such locations are then subject to the same analysis, by the central processing unit, set forth in Claim 1. These methods of identifying additional, preferred service provider branch locations is not disclosed in Shmoys. Accordingly, for the reasons set forth in Section IIIA (regarding Claim 1), Section IIIB (regarding Claim 10), and this Section IIIC (regarding Claims 25 and 26), Applicant respectfully submits that Claims 25 and 26 are not obvious in view of Shmoys and should be allowed to issue.

IV.   Conclusion

In view of the Amendments to the Claims, and the remarks above, Applicant respectfully requests that the current rejections under §§ 101 and 103(a) be withdrawn, and Claims 1, 10, 25 and 26 be allowed to issue.

Date: February 5, 2009   Respectfully submitted,

                                                     /s/ James Surber, #48,381